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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
07/824,287	01/23/92	OGAWA	K 04455/024001

EXAMINER
WATKINS III,W

FISH & RICHARDSON
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WASHINGTON, DC 20005

ART UNIT	PAPER NUMBER
1508	7

DATE MAILED: 12/11/92

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☑ This application has been examined ☑ Responsive to communication filed on 10-21-92 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133.

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☑ Notice of References Cited by Examiner, PTO-892.
2. ☐ Notice re Patent Drawing, PTO-948.
3. ☑ Notice of Art Cited by Applicant, PTO-1449. (2)
4. ☐ Notice of Informal Patent Application, Form PTO-152.
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.
6. ☐ _____

Part II SUMMARY OF ACTION

1. ☑ Claims 1-23 are pending in the application.
   Of the above, claims 12-23 are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☑ Claims 1-~~12~~11 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed on _____, has been ☐ approved. ☐ disapproved (see explanation).
12. ☑ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☑ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

15. The disclosure is objected to because of the following informalities: the top corner of page 7 of the specification is torn off. The first word of the second line has the letters "sed". The other lines are intact. Appropriate correction is required.

16. The oath or declaration is defective. A new oath or declaration in compliance with 37 C.F.R. § 1.67(a) identifying this application by its Serial Number and filing date is required. See M.P.E.P. §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not include the date of execution. A new oath will not be required if a certificate from the notary giving the actual date when the oath was made is supplied.

The bottom of the first page of the oath with the date of Mr. Ogawa's signature has been torn off.

17. Applicant's election with traverse of Group I, claims 1-11 in Paper No. 6, filed Oct. 21, 1992 is acknowledged. The traversal is on the ground(s) that the examiner used the word "rough" instead of "irregular" to describe the claimed surface. This is not found persuasive because both words are used in the cited art.

The requirement is still deemed proper and is therefore made FINAL.

18. Claims 1-11 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards

as the invention.

In claims 1-11 use of "water-" is unclear. In claim 1 use of "directly or indirectly" is indefinite since these terms together do not further define the type of bonding. In claim 2 use of "irregularities are from irregularities" and "due to" are indefinite. It is not clear if the irregularities and particles are part of the combination or if they caused the claimed irregularities but no longer exist.

In claim 3 "and fine particles" is unclear. In claim 4 there is no antecedent basis for "said polymer". In claim 6 it is not clear how the adsorbing film "being a monomolecular film" as in claim 1 can also comprise a surface irregular film. Also in claim 6 it is unclear how the irregular film can be formed on either a thin layer or a monomolecular layer when a monomolecular layer is included in the class of thin layers from the second through the fourth lines of the claim. Also, in claim 1 a monomolecular layer can be a polymer layer. It is not clear how they are distinct. In claim 7 use of "and/or" is indefinite. Also, particles and silicate glass are not distinct elements. Again in claim 7 same overlap problems with thin film, monomolecular layer and irregular layer. Claim 8 uses improper Markush language. Proper language is "selected from the group consisting of A, B and C".

Glass, ceramics, stone, and semiconductors are improper

because their subject matter overlap. Metes and bounds of "anti-contaminating" is unclear in claim 9. In claims 10 and 9 claims 7 and 8 should be referred to using "or".

18. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Title should mention surface irregularities.

19. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
>
> Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103.

20. Claims 1-10 are rejected under 35 U.S.C. § 103 as being unpatentable over Kido et al. in view of Ogawa '316 and Inoguchi et al.

Kido et al teaches a fluorine resin with a surface roughness of 0.3-5 micrometers caused by filler particles which may be SiO2 (column 2, lines 44-58). The fluorine resin is laminated to a plastic surface to increase slidability. Ogawa '316 teaches the formation of single or multiple layer monomolecular layers using silane chemistry (column 1, lines 60-65, Figure 6) and fluorine end groups to increase slidability. Inoguchi et al. teaches coating glass with silane-fluorine compounds to form a better filler in fluorine polymer layers (abstract). The instant invention claims a rough surface caused by silica particles in a silane-fluorine coupled system with the particles in different locations between the substrate and top monomolecular layer. It would have been obvious to one of ordinary skill in the art to form a fluorine layer on Kido et al by using the monomolecular layers of Ogawa et al in combination with the particles of Inoguchi et al in order to form a strong film with all components being joined by chemical bounds. Total number of monolayers and monolayers on top of and below the particles is a function of the desired amount of roughness and the total wear resistance desired. Variation of the particle and monolayer positions is within the ordinary skill of

the art given the above motivation.

21. Claim 11 is rejected under 35 U.S.C. § 103 as being unpatentable over Kido et al. in view of Ogawa '316 and Inoguchi et al. as applied to claims 1-10 above, and further in view of Ohno et al.

Ohno et al teaches the use of a rough substrate to form roughness on a coating (column 4, lines 20-20). The instant invention claims a rough substrate. It would have been obvious to one of ordinary skill in the art roughen the substrate of Kido et al. as modified above in order to further control the roughness because of the teachings of Onho et al.

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The other references show various monomolecular layers.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William P. Watkins, III whose telephone number is (703) 308-2420.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-2351.

ELLIS P. ROBINSON
SUPERVISORY PATENT EXAMINER
ART UNIT 158

W. Watkins:pdw
December 10, 1992